

U.S. DEPARTMENT OF LABOR  
Occupational Safety and Health Administration

# MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,  
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

## SECTION I

MANUFACTURER'S NAME <b>Sherwin Incorporated</b>		EMERGENCY TELEPHONE NO. <b>213/861-6324</b>
ADDRESS (Number, Street, City, State, and ZIP Code) <b>5530 Borwick Ave., South Gate, CA 90280</b>		
Mixture. (Solvent CAS No. 67-63-0)		TRADE NAME AND SYNONYMS <b>D100 Developer &amp; D350 Developer</b>
CHEMICAL FAMILY	FORMULA	

## SECTION II

## INGREDIENTS

<u>Ingredient</u>	<u>Apprx %</u>
Isopropyl Alcohol	95%
Talc, hydrous magnesium silicate	5%

Solvent (isopropyl alcohol) represents principal hazard. See MSDS of Shell Oil Company, number 5,120-6, October 1985, attached for both Physical Hazard and Health Hazard data.

Powder represents small portion of mixture and has a TLV of 2 mg/M<sup>3</sup> respirable dust over 8 hour exposure period. As a suspension and as used in the process, powder dust should not be a problem.

NOTE: Spray can package would include hydrocarbon propellant.  
Hydrocarbon propellant is extremely flammable.  
Note special precautions for handling and storing spray can packages. Read the label.

SEE ATTACHED SHELL OIL CO. MSDS FOR HAZARD INFORMATION.

## SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	180	SPECIFIC GRAVITY (H <sub>2</sub> O=1)	0.79
VAPOR PRESSURE (mm Hg.)	68 F	PERCENT VOLATILE BY VOLUME (%)	95
VAPOR DENSITY (AIR=1)	2.1	EVAPORATION RATE (N-butyl acetate = 1)	1.4
SOLUBILITY IN WATER	complete except powder.		
APPEARANCE AND ODOR	White powder suspension. Mild alcohol odor.		

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	53 F-TCC	FLAMMABLE LIMITS	Lel	Uel
			2	12
EXTINGUISHING MEDIA	Use water fog, "Alcohol" Foam, Dry Chemical or CO-2			
SPECIAL FIRE FIGHTING PROCEDURES	SEE ATTACHED SHELL MSDS.			
UNUSUAL FIRE AND EXPLOSION HAZARDS	SEE ATTACHED SHELL MSDS.			



# MATERIAL SAFETY DATA SHEET

MSDS NUMBER ▶

5,120-6

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87367 (4-R5)

<b>24 HOUR EMERGENCY ASSISTANCE</b>			<b>GENERAL MSDS ASSISTANCE</b>		
SHELL: 713-473-9461 CHEMTREC: 800-424-9300			SHELL: 713-241-4819		
ACUTE HEALTH +	FIRE 3	REACTIVITY 0	HAZARD RATING LEAST - 0 SLIGHT - 1 MODERATE - 2 HIGH - 3 EXTREME - 4		
*For acute and chronic health effects refer to the discussion in Section III					



<b>SECTION I</b>	<b>NAME</b>
PRODUCT ▶	ISOPROPYL ALCOHOL
CHEMICAL NAME ▶	IPA, ISOPROPANOL, 2-PROPANOL
CHEMICAL FAMILY ▶	ALCOHOL
SHELL CODE ▶	31105

SECTION II-A		PRODUCT/INGREDIENT	
NO.	COMPOSITION	CAS NUMBER	PERCENT
1	ISOPROPYL ALCOHOL	67-63-0	100

SECTION II-B		ACUTE TOXICITY DATA	
NO.	ACUTE ORAL LD50	ACUTE DERMAL LD50	ACUTE INHALATION LC50
1	5840 MG/KG (RAT)	13000 MG/KG (RABBIT)	12000 PPM (RAT) 8 HRS

## SECTION III HEALTH INFORMATION

THE HEALTH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200).

**EYE CONTACT**  
MODERATELY IRRITATING TO THE EYES.

**SKIN CONTACT**  
MILDLY IRRITATING TO THE SKIN.

**INHALATION**  
MAY CAUSE MILD IRRITATION TO THE NOSE, THROAT AND RESPIRATORY TRACT AND MAY RESULT IN CENTRAL NERVOUS SYSTEM (CNS) DEPRESSION.

**INGESTION**  
GENERALLY CONSIDERED TO HAVE A LOW ORDER OF ACUTE ORAL TOXICITY.

**SIGNS AND SYMPTOMS**  
IRRITATION AS NOTED ABOVE. EARLY TO MODERATE CNS DEPRESSION MAY BE EVIDENCED BY GIDDINESS, HEADACHE, DIZZINESS, AND NAUSEA.

**AGGRAVATED MEDICAL CONDITIONS**  
PREEXISTING SKIN, EYE AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO IPA.

**OTHER HEALTH EFFECTS**

INTENTIONAL ABUSE, MISUSE OR OTHER MASSIVE EXPOSURE TO IPA MAY RESULT IN DIFFICULT BREATHING, NAUSEA VOMITING AND HEADACHE ACCOMPANIED BY VARIOUS DEGREES OF CNS DEPRESSION. COMA AND/OR DEATH ARE EVEN POSSIBLE.

SEE SECTION VI FOR ADDITIONAL HEALTH INFORMATION.

**SECTION IV OCCUPATIONAL EXPOSURE LIMITS**

NO.	OSHA PEL/TWA	PEL/CEILING	ACGIH TLV/TWA	TLV/STEL	OTHER
1	400 PPM		400 PPM	500 PPM	

50% ODOR RECOGNITION THRESHOLD IS 7.5 PPM.

**SECTION V EMERGENCY AND FIRST AID PROCEDURES****EYE CONTACT**

IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS OPEN. GET MEDICAL ATTENTION.

**SKIN CONTACT**

FLUSH SKIN WITH WATER. IF IRRITATION OCCURS, GET MEDICAL ATTENTION.

**INHALATION**

REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GET MEDICAL ATTENTION.

**INGESTION**

DO NOT GIVE LIQUIDS IF VICTIM IS UNCONSCIOUS OR VERY DROWSY. OTHERWISE, GIVE NO MORE THAN 2 GLASSES OF WATER AND INDUCE VOMITING BY GIVING 30CC (2 TABLESPOONS) SYRUP OF IPECAC.\* IF IPECAC IS UNAVAILABLE, GIVE 2 GLASSES OF WATER AND INDUCE VOMITING BY TOUCHING FINGER TO BACK OF VICTIM'S THROAT. KEEP VICTIM'S HEAD BELOW HIPS WHILE VOMITING. GET MEDICAL ATTENTION.

**NOTE TO PHYSICIAN**

\*IF VICTIM IS A CHILD, GIVE NO MORE THAN 1 GLASS OF WATER AND 15CC (1 TABLESPOON) SYRUP OF IPECAC. IF SYMPTOMS SUCH AS LOSS OF GAG REFLEX, CONVULSIONS OR UNCONSCIOUSNESS OCCUR BEFORE EMESIS, GASTRIC LAVAGE SHOULD BE CONSIDERED FOLLOWING INTUBATION WITH A CUFFED ENDOTRACHEAL TUBE.

**SECTION VI SUPPLEMENTAL HEALTH INFORMATION**

IN RATS: 1) LIVER AND KIDNEY ENLARGEMENT HAS BEEN SEEN AT LEVELS >6250 PPM IN DRINKING WATER. 2) ANEMIA HAS BEEN SEEN AT 12500 AND 25000 PPM IN DRINKING WATER.

**SECTION VII PHYSICAL DATA**

BOILING POINT: 180 (DEG F)	SPECIFIC GRAVITY: 0.79 (H2O=1)	VAPOR PRESSURE: 33 @ 68 DEG F (MM HG)
MELTING POINT: -127 (DEG F)	SOLUBILITY: COMPLETE (IN WATER)	VAPOR DENSITY: 2.1 (AIR=1)
EVAPORATION RATE (N-BUTYL ACETATE = 1): 1.4		

APPEARANCE AND ODOR: COLORLESS, MOBILE LIQUID. MILD ODOR.

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**SECTION VIII****FIRE AND EXPLOSION HAZARDS**  
-----FLASH POINT AND METHOD:  
53 DEG F -TCCFLAMMABLE LIMITS % VOLUME IN AIR  
LOWER: 2 UPPER: 12**EXTINGUISHING MEDIA**

USE WATER FOG, "ALCOHOL" FOAM, DRY CHEMICAL OR CO2.

**SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS**

WARNING. FLAMMABLE. CLEAR FIRE AREA OF UNPROTECTED PERSONNEL. DO NOT ENTER CONFINED FIRE SPACE WITHOUT FULL BUNKER GEAR (HELMET WITH FACE SHIELD, BUNKER COATS, GLOVES AND RUBBER BOOTS). INCLUDING A POSITIVE PRESSURE NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER.

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

CONTAINERS EXPOSED TO INTENSE HEAT FROM FIRES SHOULD BE COOLED WITH WATER TO PREVENT VAPOR PRESSURE BUILDUP WHICH COULD RESULT IN CONTAINER RUPTURE. CONTAINER AREAS EXPOSED TO DIRECT FLAME CONTACT SHOULD BE COOLED WITH LARGE QUANTITIES OF WATER AS NEEDED TO PREVENT WEAKENING OF CONTAINER STRUCTURE.

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**SECTION IX****REACTIVITY**  
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STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

**CONDITIONS AND MATERIALS TO AVOID:**

AVOID HEAT, SPARKS, FLAME AND CONTACT WITH STRONG OXIDIZING AGENTS. DO NOT STORE OR HANDLE IN ALUMINUM EQUIPMENT AT TEMPERATURES ABOVE 120 DEG. F.

**HAZARDOUS DECOMPOSITION PRODUCTS**

CARBON MONOXIDE AND UNIDENTIFIED ORGANIC COMPOUNDS MAY BE FORMED DURING COMBUSTION.

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**SECTION X****EMPLOYEE PROTECTION**  
-----**RESPIRATORY PROTECTION**

IF EXPOSURE MAY OR DOES EXCEED OCCUPATIONAL EXPOSURE LIMITS (SEC. IV) USE A NIOSH-APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE. IN ACCORD WITH 29 CFR 1910.134 USE EITHER AN ATMOSPHERE-SUPPLYING RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR FOR ORGANIC VAPORS.

**PROTECTIVE CLOTHING**

AVOID CONTACT WITH EYES. WEAR CHEMICAL GOGGLES IF THERE IS LIKELIHOOD OF CONTACT WITH EYES. AVOID PROLONGED OR REPEATED CONTACT WITH SKIN. WEAR CHEMICAL-RESISTANT GLOVES AND OTHER CLOTHING AS REQUIRED TO MINIMIZE CONTACT.\*

**ADDITIONAL PROTECTIVE MEASURES**

\*TEST DATA FROM PUBLISHED LITERATURE AND/OR GLOVE AND CLOTHING MANUFACTURERS INDICATE THE BEST PROTECTION IS PROVIDED BY NITRILE, NEOPRENE AND NATURAL RUBBER GLOVES. USE EXPLOSION-PROOF VENTILATION AS REQUIRED TO CONTROL VAPOR CONCENTRATIONS.

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**SECTION XI****ENVIRONMENTAL PROTECTION**  
-----**SPILL OR LEAK PROCEDURES**

WARNING. FLAMMABLE. ELIMINATE ALL IGNITION SOURCES. HANDLING EQUIPMENT MUST BE GROUNDED TO PREVENT SPARKING. \*\*\* LARGE SPILLS \*\*\* EVACUATE THE HAZARD AREA OF UNPROTECTED PERSONNEL. WEAR APPROPRIATE RESPIRATOR AND PROTECTIVE CLOTHING. SHUT OFF SOURCE OF LEAK ONLY IF SAFE TO DO SO. DIKE AND CONTAIN. IF VAPOR CLOUD FORMS, WATER FOG MAY BE USED TO SUPPRESS; CONTAIN RUN-OFF. REMOVE WITH VACUUM TRUCKS OR PUMP TO STORAGE/SALVAGE VESSELS. SOAK UP RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND OR OTHER SUITABLE MATERIAL; PLACE IN NON-LEAKING CONTAINERS FOR PROPER DISPOSAL. FLUSH AREA WITH WATER TO REMOVE TRACE RESIDUE; DISPOSE OF FLUSH SOLUTIONS AS ABOVE. \*\*\* SMALL SPILLS \*\*\* TAKE UP WITH AN ABSORBENT MATERIAL AND PLACE IN NON-LEAKING CONTAINERS; SEAL TIGHTLY FOR PROPER DISPOSAL.

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**WASTE DISPOSAL**

UNDER EPA-RACA (40 CFR 261.21), IF THIS PRODUCT BECOMES A WASTE MATERIAL, IT WOULD BE IGNITABLE HAZARDOUS WASTE, HAZARDOUS WASTE NUMBER D001. REFER TO LATEST EPA OR STATE REGULATIONS REGARDING PROPER DISPOSAL.

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**SECTION XII**

**SPECIAL PRECAUTIONS**  
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KEEP LIQUID AND VAPOR AWAY FROM HEAT, SPARKS AND FLAME. SURFACES THAT ARE SUFFICIENTLY HOT MAY IGNITE EVEN LIQUID PRODUCT IN THE ABSENCE OF SPARKS OR FLAME. EXTINGUISH PILOT LIGHTS, CIGARETTES AND TURN OFF OTHER SOURCES OF IGNITION PRIOR TO USE AND UNTIL ALL VAPORS ARE GONE.

WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING OR USING TOILET FACILITIES. LAUNDRER CONTAMINATED CLOTHING BEFORE REUSE.

DO NOT STORE OR HANDLE IN ALUMINUM EQUIPMENT AT TEMPERATURES ABOVE 120 DEG. F.

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**SECTION XIII**

**TRANSPORTATION REQUIREMENTS**  
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DEPARTMENT OF TRANSPORTATION CLASSIFICATION: FLAMMABLE LIQUID  
D.O.T. PROPER SHIPPING NAME: ISOPROPANOL

**OTHER REQUIREMENTS:**

DOT ID NUMBER = UN 1219 - GUIDE SHEET 26

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**SECTION XIV**

**OTHER REGULATORY CONTROLS**  
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THIS PRODUCT IS LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES.

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THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.  
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DATE PREPARED: OCTOBER 07, 1985  
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**BE SAFE**

READ OUR PRODUCT  
SAFETY INFORMATION ...AND PASS IT ON  
(PRODUCT LIABILITY LAW  
REQUIRES IT)

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**JOHN P. SEPESI**  
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